

IN THE CLAIMS

1-39 (Canceled).

40. (Currently Amended) A semiconductor device, comprising:

a first active region having a first portion with a first width and a second portion with a second width smaller than said first width;

a second active region having a third portion with a width substantially the same as said first width and fourth portion with a width smaller than said first width;

a third active region disposed between said first and second active regions having a width substantially the same as said first width; and

first, second and third contacts connected respectively to said first, second and third active regions;

~~said first and second active regions being symmetrically self-aligned.~~

41. (Original) A device as recited in claim 40, comprising:

one of said first and second active regions being self-centered with said third active region.

42. (Currently Amended) A device as recited in claim 40, wherein:

said first active region comprises an emitter;

said second active region comprises a collector;

said third active region comprises a base; and

said collector is symmetrically self-aligned with said ~~emitter~~; emitter.

43. (Original) A device as recited in claim 42, comprising:

one of said collector and said emitter being self-centered with said base.

44. (Currently Amended) A device as recited in claim 42, comprising:

said emitter having ~~a narrow~~ said second portion self-centered with said base; and

said collector having ~~a narrow~~ said fourth portion self-centered with said base and symmetric with said ~~emitter~~ second portion.

45. (Previously Presented) A device as recited in claim 42, comprising:

said base having a lower and an upper ledge; and

said third contact comprising:

a first base contact formed on said upper ledge self-aligned with said emitter; and

a second base contact formed on said lower ledge self-aligned with said collector.

46. (Previously Presented) A device as recited in claim 42, comprising:

said base having a ledge;

said third contact formed on said ledge self-aligned with said emitter.

47. (Previously Presented) A device as recited in claim 46, wherein:

said base has ledges on opposing sides; and

said third contact comprises:

a first base contact formed from a front side of said device; and

a second base contact formed opposing said first base contact on said ledge self-aligned with said collector and formed from a back side of said device.

48. (Canceled)

49. (Original) A device as recited in claim 42, wherein:

said device is a heterojunction bipolar transistor.

50. (Previously Presented) A device as recited in claim 42, wherein:

said base layer has a lower ledge and an upper ledge; and

said third contact comprises:

a first base contact formed on said upper ledge; and

a second base contact formed on said lower ledge.

51. (Canceled)

52. (Cancel)

53. (Currently Amended) A device as recited in claim 40 52, comprising:
said second portion disposed between said third active region and said first portion.

54. (Cancel)

55. (Currently Amended) A device as recited in claim 40 52, comprising:
said ~~second~~ fourth portion disposed between said third active region and said ~~first~~
third portion.

56. (Cancel)

57. (Currently Amended) A semiconductor device structure, comprising:
a first active region having a first portion with a first width and a second portion with
a second width smaller than said first width;

a second active region having a third portion with a width substantially the same as
said first width and fourth portion with a width smaller than said first width; and

a third active region disposed between said first and second active regions having a
width substantially the same as said first width; and

first, second and third contacts connected respectively to said first, second and third
active regions;

~~a position of said first active region being self-centered with a position of said second~~
~~active region in said device structure.~~

58. (Currently Amended) A structure as recited in claim 57, wherein:
~~said a~~ position of said first active region in said structure is self-centered with ~~said a~~
position of said third active region; and

~~said a~~ position of said second active region in said structure is self-centered with ~~said~~
a position of said third region.

59. (Previously Presented) A structure as recited in claim 57, comprising:

said first, second and third active regions formed in a vertical stack;
said stack having a vertical axis passing through a center of said first, second and third active regions; and
said first, second and third active regions each being symmetric about said vertical axis.

60. (Previously Presented) A structure as recited in claim 59, wherein:

said first and second contacts being symmetric about said vertical axis.

61. (Previously Presented) A structure as recited in claim 60, comprising:

said third contact being symmetric about said vertical axis.

62. (Previously Presented) A structure as recited in claim 57, comprising:

said third active region having a ledge; and

said third contact disposed on said ledge.

63. (Previously Presented) A structure as recited in claim 57, comprising:

said third active region having ledges on opposing surfaces; and

said third contact disposed on each of said ledges.

64. (Previously Presented) A structure as recited in claim 57, comprising:

said third active region having a side surface and a plane surface; and

said third contact disposed on said side and plane surfaces

65. (Previously Presented) A structure as recited in claim 57, comprising:

said third active region having a side surface and two opposing plane surfaces; and

said third contact disposed on each of said side and said opposing plane surfaces.

66. (Previously Presented) A structure as recited in claim 57, comprising:

said first active region having a width substantially equal to a width of said first contact; and

said second active region having a width substantially equal to a width of said second contact.

67. (Previously Presented) A structure as recited in claim 57, wherein:

said first active region comprises an emitter region;

said second active region comprises a collector region; and

said third active region comprises a base region.

68. (Currently Amended) A structure as recited in claim 67, wherein:

~~said a~~ position of said emitter region in said structure is self-centered with ~~said a~~ position of said base region; and

~~said a~~ position of said collector region in said structure is self-centered with ~~said a~~ position of said base region.

69. (Previously Presented) A structure as recited in claim 67, comprising:

said emitter, base and collector regions formed in a vertical stack;

said stack having a vertical axis passing through a center of said emitter, base, and collector regions; and

said emitter, base, and collector regions each being symmetric about said vertical axis.

70. (Previously Presented) A structure as recited in claim 69, wherein:

said first and second contacts being symmetric about said vertical axis.

71. (Previously Presented) A structure as recited in claim 69, comprising:

said third contact being symmetric about said vertical axis.

72. (Previously Presented) A structure as recited in claim 67, comprising:

said base region having a ledge; and

said third contact disposed on said ledge.

73. (Previously Presented) A structure as recited in claim 67, comprising:

said base region having ledges on opposing surfaces; and

said third contact disposed on each of said ledges.

74. (Previously Presented) A structure as recited in claim 67, comprising:

said base region having a side surface and a plane surface; and

said third contact disposed on said side and plane surfaces.

75. (Previously Presented) A structure as recited in claim 57, comprising:

said base region having a side surface and two opposing plane surfaces; and

said third contact disposed on each of said side and said opposing plane surfaces.

76. (Previously Presented) A structure as recited in claim 67, comprising:

said emitter region having a width substantially equal to a width of said first contact;

and

said collector region having a width substantially equal to a width of said second contact.

77. (Cancel)

78. (Cancel)

79. (New) A device as recited in claim 40, comprising:

said first and second active regions being symmetrically self-aligned.

80. (New) A device as recited in claim 40, comprising:

said third contact formed on said third active region interior to an outer edge of third active region.

81. (New) A structure as recited in claim 57, comprising:

a position of said first active region being self-centered with a position of said second active region in said device structure.

82. (New) A structure as recited in claim 57, comprising:

said third contact formed on said third active region interior to an outer edge of third active region.